

1                   1.     (Twice Amended) A method of manufacturing thin film transistors  
2     comprising the steps of:

3                   (a)     forming a plurality of island-shaped semiconductor layers on a substrate  
4     having an insulative surface;

5                   (i)     forming a gate insulating film on each of the semiconductor  
6     layers;

7                   (ii)    forming a gate electrode on the gate insulating film over each of  
8     said semiconductor layers;

9                   (b)     implanting dopant into first regions at outsides of designated for offset  
10    regions adjacent to a channel region under said gate electrode in each of said semiconductor  
11    layers directly or through a thin insulation film whose thickness is equal to or less than 50nm  
12    by ion implantation to form lightly doped regions; and

13                  (c)     implanting dopant into outer regions within said first regions in each of  
14    said semiconductor layers directly or through said thin insulation film to form heavily doped  
15    source/drain regions whose impurity concentration is higher than that of said lightly doped  
16    regions,

17                  wherein said ion implanting steps (b) and (c) are so selected that hydrogen ions  
18    are also implanted into said lightly doped regions and said heavily doped source/drain  
19    regions, but not into said channel region under said gate electrode, and

20                  wherein said dopant cannot substantially be implanted into said offset regions.

1                   22. (Amended) A method of manufacturing thin film transistors  
2 comprising the steps of:

3                   (a) forming a plurality of island-shaped semiconductor layers on a substrate  
4 having an insulative surface;

5                   (i) forming a gate insulating film on said substrate, said film  
6 covering said semiconductor layers;

7                   (ii) forming a gate electrode layer on said gate insulating film;

8                   (b) implanting dopant into first regions at outsides of regions designated  
9 for offset regions adjacent to a channel region in each of said semiconductor layers directly  
10 or through a thin insulation film whose thickness is equal to or less than 50nm by ion  
11 implantation to form lightly doped regions;

12                   (c) implanting dopant into outer regions within said first regions in each of  
13 said semiconductor layers directly or through said thin insulation film to form heavily doped  
14 source/drain regions whose impurity concentration is higher than that of said lightly doped  
15 regions; and

16                   (d) irradiating a laser beam directly or through said thin insulation film to  
17 said first regions to activate dopants implanted in steps (b) and (c),

18 wherein said dopant cannot substantially be implanted into said offset regions.